

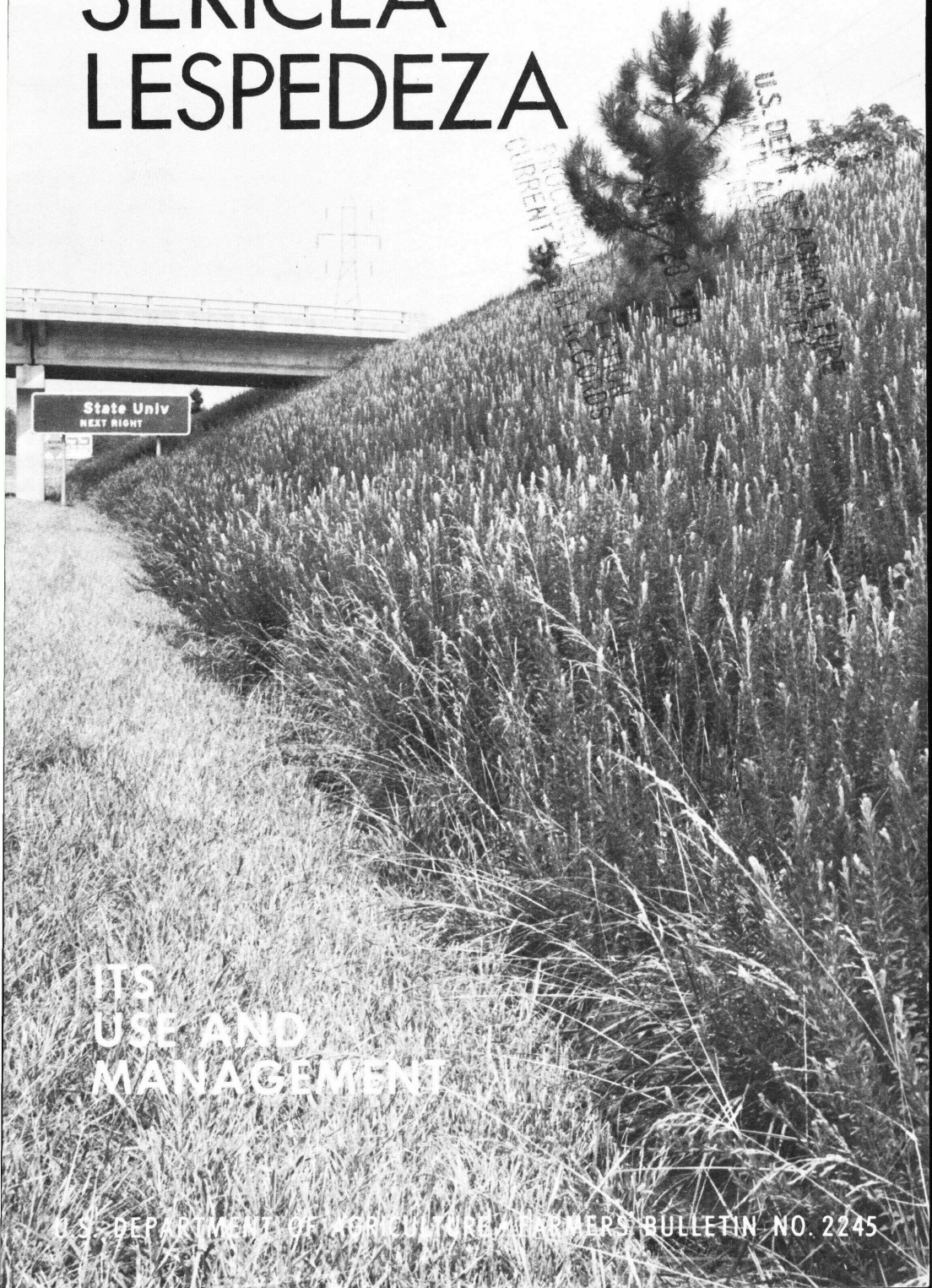
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PASTURE 5

SERICEA LESPEDeza



ITS
USE AND
MANAGEMENT

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SERICEA LESPEDEZA

ITS USE AND MANAGEMENT

By Walter J. Guernsey, *agronomist*, Soil Conservation Service

Sericea lespedeza, one of many plants used in soil and water conservation, has a special place in the Southern States. It provides good ground cover on soils that are not well suited to other plants, and it helps build the soil by replenishing the nitrogen supply. And farmers are finding that sericea makes very good hay and pasture.

Until recently too much emphasis had been placed on sericea's growth on soils of low productivity and too little on its potential for forage on good soils. Moreover, the fact that sericea survives a year or two of close grazing has also led to some wrong ideas about its hardiness. There has been a tendency to penalize the plant by giving it the hardest possible use.

Much has been done through research and field trials to correct these ideas and to change past planting patterns. Farmers themselves have contributed much to what is now known about this plant. Many growers are managing it better and are fertilizing it as it should be. And the results have been much more satisfactory.

Sericea Varieties and Research

Sericea lespedeza, *Lespedeza cuneata*, is an upright, perennial summer legume. It was first recognized as *Lespedeza sericea*, hence its common name, sericea.



ALA-1,044

Improved varieties like Serala produce more hay and provide better erosion control.

For many years only common sericea and the 'Arlington' variety were available for planting. Arlington was developed by the Soil Conservation Service (SCS) of the U.S. Department of Agriculture. It is an improvement over common sericea because of its finer, more leafy stems. Both varieties, if managed properly, produce very satisfactory results.

Another variety, 'Serala', developed by Dr. E. D. Donnelly, was released by Auburn University in 1959. It also has fine stems and leaves but is shorter, denser, and more branching than the other varieties.

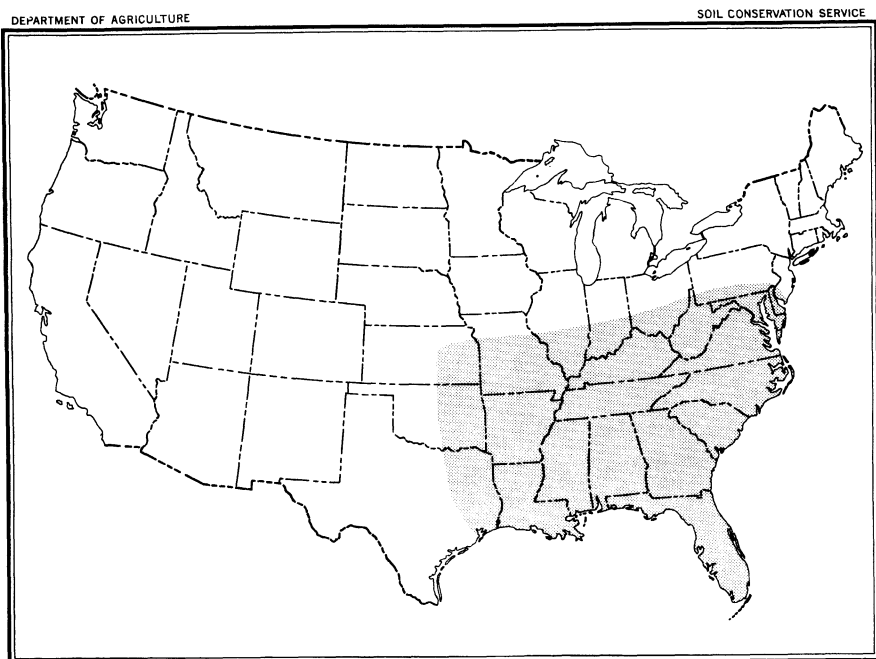
Four-year hay production tests at five Alabama and two Georgia experiment stations gave these average annual production figures per acre: Common, 5,939 pounds; Arlington, 6,035 pounds; Serala, 7,089 pounds.

'Interstate' sericea, also developed by Dr. Donnelly, was released in December 1969. It is shorter growing, branches more profusely, has finer stems, and grows more uniformly than other varieties tested in Alabama. Although it was developed primarily for roadside use, Interstate looks promising as a grazing and hay crop in many areas.

Research to develop more improved varieties and better management methods is continuing.

Climatic Range and Soils

Sericea is not well suited to areas where the rainfall is less than 30 to 35 inches or where most of the rain occurs in winter. It makes good growth in its region of adaptation from the Atlantic Coast States westward into eastern Texas, Oklahoma, and Kansas and as far north as the southern half of Illinois, Indiana, and Ohio.



Sericea lespedeza range of adaptation.

Sericea grows well on many kinds of soil but does best on the deep well-drained loess soils of Mississippi, Tennessee, and Kentucky and on the deep red soils of the Piedmont Plateau. Sericea grows satisfactorily on moderately well drained soils and on many sandy soils. It makes good growth on sandy loams that have a clay loam subsoil within 18 to 24 inches of the surface and on deep sands that are well supplied with organic matter.

Sericea also grows on soils that have a hardpan (a tight hard layer of soil that restricts water and air movement and root development) if the hardpan is far enough below the soil surface for roots to develop above it. The minimum depth for root development is about 18 inches. If the permeable soil is less than 18 to 20 inches deep, the stand thins out rapidly. Sericea grows on soils ranging from strongly acid to alkaline but does best on soils with a pH of 6.0 to 6.5.

It will stand some flooding, particularly in winter. Sericea has survived as long as 10 days under cool moving water but it does not live long under warm standing water.

Growing Sericea

Sericea is one of the earliest plants to begin growth in the spring even though each winter it is killed back to the ground by freezing temperatures. New shoots develop at the root crown early the next spring. The new shoots are tender and succulent until the plants are about 15 inches tall but after that they become solid and fibrous. For this reason, the best time to cut for hay is when the plants are 12 to 15 inches tall. The degree of succulence, however, cannot be judged entirely by height. Plants on fertile soils grow faster and retain their tenderness to a greater height than those grown on infertile soils.

Seeding time

Early spring (2 or 3 weeks before normal corn planting time) is a good time to seed sericea. It is not necessary to wait



KY-750

Well-managed spring seedlings produce thick, full stands the second year.

until all danger of frost is past. Young seedlings are cold-hardy, especially in the two-leaf stage, and withstand freezes severe enough to kill tender shoots on old sericea plants. Usually they do not grow out of this cold-hardy stage until the frost season is past.

Almost everywhere in the South, sericea sown early in the spring can be depended on to make vigorous growth the second year. If it is seeded in late spring or early summer, the root system does not develop well enough before winter to promote normal vigorous growth the second year and you may not get a thick stand before the third year.

In the middle and lower parts of the South, avoid seeding sericea in late April and May. The root systems do not develop well enough to carry the plants through the hot dry weather of May and early June. If an early spring planting is not possible, delay seeding until late June and early July because of the better moisture supply then.

Seedbed preparation

A good seedbed is needed to get a stand of sericea. Deep plowing is not necessary, but a few inches of well-pulverized surface soil is needed. Disking is usually enough on most soils. If there is a plant or trash cover or if the soil is hard, it may be necessary to plow and firm it.

If there is no danger of erosion, it is a good idea to plow or rough disk the soil in late fall or midwinter and leave it rough until near seeding time. Just before seeding, disk once or twice to kill young weeds and to firm the soil. At seeding time, use a harrow or cultipacker to firm the seedbed and provide fresh soil for the seed. Using a nonresidual herbicide at planting time to control weeds is often a good practice.

Usually it is not necessary to cover the seed, especially on soils that form a crust. But on sandy soils and soils not so likely to crust, it is helpful to use a cultipacker to cover the seed to a depth of about one-fourth inch.

Through most of the region of adaptation, sericea seed does not require inoculation. But in the upper one-third of the region and in Kentucky in particular, the seed should be treated with lespedeza inoculant. Stick the inoculant to the seed by mixing it with soft drinks, milk, or a mixture of sirup and water.

Seeding rate

A thick stand is important. It gives a more complete protective ground cover, makes finer stemmed hay, and competes with weeds more successfully than a thin stand. It is better to sow enough seed to get a thick stand in the beginning than to depend on a thin stand thickening from natural reseeding.

For pasture and hay, sow 30 to 45 pounds of hulled, scarified seed per acre. Seeding in the spring at these rates usually produces enough extra hay the second year to more than offset the cost of the seed. Summer seeding rates must be heavier, at least 40 and preferably 60 pounds per acre.

In the upper half of the region, climatic conditions are favorable for the growth of new seedlings that come from seed

dropped by plants in old established stands. Since these seedlings usually grow into vigorous plants and materially thicken the original stand, lower seeding rates can be used.

But in the lower half of the region, second-year or older plants use the soil moisture so completely during spring and summer droughts that new seedlings cannot compete with the older plants. In this area, heavier seeding rates are needed.

Broadcast seedings usually give the best stands. Plant growth ranges from a few inches to 3 feet the first year, depending on the date of seeding, productivity of the soil, and available moisture supply.

In most places the plants make good growth the second year. If not mowed for hay or grazed, fully established stands of sericea on fertile soil often grow 4 to 5 feet high.

Fertilizer and lime

Because of some of the early experiences of growing sericea on eroded soils without fertilizer or lime, it was referred to as a poor-land crop. Since many of these earlier plantings were harvested only for seed, all the plant material except the seed was left on the land. Some of these sericea stands remained vigorous for many years without any commercial fertilizer.

Today, farmers lime and fertilize their sericea hay and pasture fields and use soil tests as a guide in determining the amount and kind needed. Sericea should be fertilized annually or at least every other year. It has shown marked response to both phosphate and potash.

Limed and fertilized sericea makes earlier spring growth than unfertilized sericea. The forage is more palatable and the yields are larger. The plants are more vigorous and can better withstand competition from broomsedge bluestem and other undesirable plants.

First-year management

Sericea seed, hay, or pasture can be produced the first year on some fertile soils free of weeds. But usually sericea should not

be cut or grazed during the establishment year. Plants from early spring seedings usually have enough roots to survive competition from weeds and grasses except on highly fertile soils on which weeds grow vigorously. Mowing is not necessary unless the weeds and grasses overtop the sericea plants or their growth is so heavy that the plants become weak and spindly. Crabgrass may grow thick enough to kill the sericea. To avoid this, mow the green crabgrass for hay. Mow high enough to clip only the tops of the sericea plants. Preemergence herbicides used at planting time will help solve this problem.

Sericea for Hay

Well-fertilized and well-managed sericea fields on good soils yield 4 tons of hay per acre, and many farmers are getting even better yields. Pure stands of sericea make better quality hay than mixtures of sericea and grass, and the hay is much easier to cure.

Sericea hay, to be of the best quality, must be mowed at a much earlier stage of growth than most legumes. If sericea is mowed when the plants are 12 to 15 inches tall and properly cured, it is eaten readily by livestock. If mowing is delayed until the bloom stage, the hay is coarse because the stems are solid and have lost many of the leaves. The protein content of the hay decreases as the plants mature, and the tannin content of the leaves increases rapidly. This makes the hay less palatable to livestock.

Plant height, however, is not an absolute measure of hay quality. Sericea that is well fertilized so that the plants reach a height of 12 to 15 inches within a short growing period is nearly always more succulent and makes better hay than sericea that has grown slowly.

Sericea hay cures very rapidly; this gives it an advantage over slower curing hays in the Southeast where the weather is a hazard in haymaking. In good haymaking weather, sericea hay can be cut, cured, and baled in 6 hours. Or it can be cut late one afternoon, windrowed early the next morning before the dew dries



GA-D1-220

Cut sericea cures rapidly so start baling within 6 hours of cutting.

off, and baled almost immediately. The latter method, however, increases the chance of rain damaging the hay.

Because sericea should always be baled before the leaves shatter, pay close attention to the moisture content of the hay. If moisture is low, leaves may begin shattering if baling is delayed more than 6 hours after mowing. It usually is not necessary to use a hay crimping machine. Farmers who use crimpers attach them immediately behind the mower.

Sericea hay is usually thought of as a long-time hay crop. But much hay is also harvested from fields used in conservation cropping systems.

On cultivated slopes, complete water management systems are needed. They may include grassed waterways, terraces, contour stripcropping, or contour farming. Conservation cropping systems that include both grasses and legumes help keep the soil losses within permissible limits. Hay of excellent quality can be harvested from waterways, contour strips, and terrace outlets.



GA-D6-78

Contoured sericea waterways control water and soil erosion. They can be pastured or cut for hay.

Crops grown after sericea often require extra nitrogen because much of the nitrogen produced by the sericea is used by soil micro-organisms in changing the vegetative material to soil organic matter.

In 1930 at the West Tennessee Experiment Station at Jackson, Tenn., sericea was planted on land that produced about 25 bushels of corn per acre. For the first 3 years of the experiment, the sericea was either cut for hay or harvested for seed. In the fourth year, two plots of sericea were plowed and planted to corn. Each year through 1943, two more plots were plowed and planted to corn. This procedure provided researchers a good chance to study both the immediate and the residual effects of sericea on corn yields. The average yield of first-year corn after sericea was 70 bushels per acre. The yield for the second-year corn was 66 bushels. It took 9 years of continuous corn for the yield to drop to the 25-bushel level again.

Mowing management

Since new growth starts from the buds on the sericea stubble, it is important to mow at least 3 inches above the ground. Many stands have been severely damaged because sericea was mowed too short.

Many farmers mow sericea too late in the fall for the roots to store enough food before winter. As a consequence, the plants become weak and the stands thin out. This allows broomsedge bluestem and other weed pests to get started. Plants remain strong and stands are more vigorous if the last cutting is made by August 15 in the upper South and by September 1 in the lower South.

Sericea can usually be mowed for hay twice a year on moderately productive soils and three times on highly productive soils. On poor soils, one cutting is about all that can be expected. Farmers who follow a regular schedule of fertilizing with both phosphate and potash get two cuttings on most soils and three on the better ones. More cuttings can be made in years with enough rainfall than in years with extremely dry summers.

Sericea feeding trials

Most early feeding trials of sericea used hay that had been mowed and processed after the plants were too old to make the best quality hay. More recent tests have used hay cut in prime condition. Feeding trials now show that properly managed and cured sericea hay is about 80 percent as good as alfalfa hay. Better management practices, no doubt, can further increase quality.

The North Carolina Agricultural Experiment Station in cooperation with the McNair Farms, Laurinburg, N.C., conducted a feeding test with 99 steers. The test was designed to compare dehydrated alfalfa meal and sericea lespedeza meal as feed ingredients for beef cattle.

One-third of the steers were fed a normal ration of crushed snapped corn, cottonseed meal, molasses, ground limestone, and mineralized salt. In the ration for another one-third, 100 pounds

of dehydrated alfalfa meal was substituted for a part of the crushed corn and cottonseed meal. In the ration for the remaining one-third, 100 pounds of sericea lespedeza meal was substituted for a part of the crushed corn and cottonseed meal.

At the end of the 70-day test, the average daily weight gain was highest for the group fed the normal ration, next highest for the sericea-fed group, and lowest for the alfalfa-fed group. The carcass grade was highest for the alfalfa-fed group, next highest for the sericea-fed group, and lowest for the group fed the normal ration, but there was very little difference between the three groups.

The sericea meal fed was from green sericea plants for the first 35 days of the test and from sericea hay for the last 35 days. For the first 35 days, the group fed sericea meal led in average daily weight gain, the group fed alfalfa was next, and the normal-ration group was third.

Sericea for Pasture

Sericea is one of the best upland pasture legumes for the humid parts of the South although it was not widely used for pasture until the late 1940's. Farmers once thought that green sericea was unpalatable to livestock. Now there are many acres of sericea pasture in the South. And farmers are learning that sericea pastures stay green during summer droughts when other upland pastures fail. This is because the roots grow deep enough to get soil moisture.

Like other crops, sericea has certain management requirements that must be met. It is best to permit the plant to grow faster than it is grazed. In this way, food storage in the roots is increased.

Animals graze sericea readily if allowed to begin before the plants are too far advanced. Livestock continually graze new growth through the growing season and eagerly graze the seed just before frost. Grazing should start when the plants are about 6 inches tall. Livestock should be removed when the plants are grazed down to about 3 inches.

It is better to stock a sericea pasture at a rate that may require occasional mowing than to overstock it. Light grazing through the season or deferring grazing until near the end of the season is much better than keeping the plants continually grazed close during the entire season.

Farmers once thought it was necessary to fence livestock in sericea fields to force cattle to eat it. Today, farmers report that cattle follow a routine or set pattern of grazing all the plants or mixtures in a pasture field. The location of the plants in the field and their stage of growth, no doubt, influence livestock grazing patterns.

At the Sandhill Experiment Station in South Carolina, dairy heifers grazed sericea from April 9 to September 30. The plants were about 9 inches tall, a little more advanced than normal, when the heifers were turned in on the sericea. Each heifer made an average daily gain of 1.19 pounds. The total gain per acre was 357 pounds.

If a sericea pasture is understocked, livestock tend to spot graze, which allows some plants to approach or reach maturity sooner than others. To keep grazing uniform, the pasture should be mowed. Early in the fall, however, if the plants are not mowed, cattle begin grazing the larger sericea plants and often graze them to the ground. This grazing habit may be due to variations in tannin content in unmowed plants throughout the season.

R. E. Stitt and G. D. Clarke, working at the North Carolina Agricultural Experiment Station, found that the tannin content in the leaves of unmowed sericea increased until about July and then decreased. Their findings correspond closely with the seasonal grazing habits of animals.

Dr. E. D. Donnelly, plant breeder at Auburn University, Auburn, Ala., found that the tannin content increased as the season advanced. Mean-day temperatures increased and precipitation decreased. There was no decrease in tannin content in cuttings made during the latter part of the growing season. The tannin content was as high or higher in the third cutting as in the preceding cuttings. Donnelly concluded that tannin content increased with maturity and was not associated with plant height.



*Deep roots help
sericea grow on dry
slopes and infertile
mine spoils.*

*Root systems grow
4 feet deep.*

*Pasture is available
during summer droughts
because sericea's deep
roots can reach lowered
moisture levels.*

ALA-R2-62



OKLA-11,089

SC-D27-22



Sericea-grass mixtures

Seeding a pasture to sericea alone limits its use to that part of the year when sericea is green. Mixtures of sericea and cool-season grasses give winter and spring grazing from the grasses and summer grazing from the sericea.

Tall fescue and sericea make an excellent pasture mixture. Grazing trials and observations in eastern and northeastern Kentucky show that this mixture provides more cow-grazing days than any other mixture now used. But good management is necessary to keep the fescue from crowding out the sericea. Crowding is likely if the fescue plants are permitted to set seed.

Usually the fescue seed is drilled or sod-seeded in sericea stubble after a good rain in the fall. Disk openers on the drill are set to place the seed an inch or less deep.

Although the usual method is to overseed fescue on established sericea stands, overseeding sericea on established tall fescue stands also results in excellent stands of the mixture. In eastern Kentucky there are many pastures on very steep sandstone or low-grade limestone soils in the Appalachian region. In this area some of the farmers overseed hulled and scarified sericea seed on old heavy fescue sod and then drag a spike-tooth harrow over the field to work the seed into the soil. They use the tall fescue-sericea mixture for both pasture and hay.

In the upper South, sowing a mixture of 30 pounds of scarified sericea seed and 10 pounds of tall fescue seed early in the spring gives good stands. With this method, chemical spraying or clipping for weed control is necessary the first summer. A spring seeding of tall fescue and sericea does best if it is not grazed the first year. For top production, sericea planted alone or with grasses needs plenty of lime and fertilizer. A topdressing of nitrogen fertilizer early in the fall of the establishment year stimulates fescue growth so that the pasture can be grazed the following spring.

A mixture of tall fescue and sericea is usually considered better for pasture than for hay because of the difference in the curing time required for each plant. But many farmers who have learned the growth habits of the two plants growing together are



Pasture mixtures like sericea and tall fescue extend grazing from late winter through early fall.

able to use the mixture for both pasture and hay with little difficulty.

Sericea is one of the best legumes to grow in a mixture with bahiagrass. In the Coastal Plains, this is a good mixture to use on some of the deep infertile sands as well as on some of the better soils.

Seed Production

Some farmers harvest two crops of hay and still get a good seed crop. But usually seed yields under such management are extremely low.

Seed yields are directly affected by weather conditions. They are much greater in seasons having a favorable moisture supply than in seasons that are drier than normal. Moisture is necessary for good pollination by bees. Seed yields are considerably better on well-fertilized soils than on unfertilized soils.

Sericea produces the best seed yields if allowed to grow the full season. But harvesting seed that late is often difficult because the plants are so large and coarse. Therefore it is common practice to harvest an early cutting of hay and then allow the plants to grow the rest of the season. Under this system, plants are more uniform in height and are of finer texture than if no hay is harvested. These even-size plants pass through the combine better than coarser plants. The usual net result is that, in addition to the hay, more seed is harvested than from tall coarse plants that grow the entire season.

Most of the seed crop is harvested by direct combining. Combining starts when 65 to 75 percent of the seed hulls are brown and the hulled seeds are firm. In some seasons seed stays on the stems until frost; in other seasons it begins to shatter as soon as it is mature. Experienced seed growers examine their sericea frequently and begin harvesting after the seed has reached the desired degree of maturity.

Sericea seed can be harvested under a wide range of conditions. Adjust the combine according to the condition of the plants, such as changing the clearance between cylinder and concave bars and adjusting the fan shutters. More air is required when the leaves are green than when they are fully dry. But too much air can blow or carry the seed onto the straw rack. You should adjust the screens and sieves to remove as much trash from the seed as you can while saving as much seed as possible.

Seed must be dry before it is stored. In most locations in the South, commercial seed cleaners and driers are available so that seed can be taken directly from the combine and dried. If no drier is available, spread the seed as soon as it is harvested and stir it until it is dry enough to be stored safely. Heating occurs if green or moist seed is piled high enough to exclude air circulation; this greatly reduces the seed viability.

Yields of 300 to 600 pounds of hulled seed per acre are common if seed is harvested early enough to avoid loss by shattering. Loss varies according to the amount of leaves or other trash not removed from the seed by the combine or thresher. There are about 70 pounds of hulled clean seed in 100 pounds of unhulled seed. Each pound has about 350,000 seeds.



SC-D4-156

Begin seed harvesting when 65 to 75 percent of the seed heads are brown and bulled seeds are firm.



ALA-1,043

Sericea and tall fescue give good ground cover on steep hillsides.

Special Conservation Uses

Sericea is used mostly for hay, pasture, and seed. But because it can be grown on soils of different fertility levels and site conditions, sericea is an excellent plant to use to slow down runoff water and stabilize eroding areas.

For soil protection

Sericea is a good soil-conserving and soil-improving crop because it helps build litter. The leaves that drop during the growing season and after frost make an excellent mulch. If an established stand is not harvested for hay or pasture, as much as 2 tons of leaf litter (residue) per acre may accumulate in 1 year.

There is little chance of erosion under this leaf litter. The leaf mulch, the dense stand of plants, and the deep branching root system protect the soil against raindrop splash and running water. The stubble helps hold the litter in place. The leaf mold and the network of plant roots improve soil structure by making the topsoil more porous and increasing water penetration.

On steep or eroded slopes

Slopes too steep or eroded to be cultivated safely need a good plant cover at all times. An established thick stand of sericea or sericea and grass furnishes this kind of cover and, if properly managed, gives good protection against erosion. But a thin or overgrazed stand does not give adequate protection.

In many fields there are some very rough and irregular areas that cannot be cultivated in the same way as the rest of the field. The conservation treatment based on the needs of the better parts of the field does not provide the critical areas enough protection against erosion. Sericea seeded alone or with a grass on these areas provides good protection and also furnishes some hay and pasture.

In waterways or outlets

Sericea and grasses can be planted together in waterways or outlets. Tall fescue or bahiagrass are commonly used in areas

where they are well adapted. In some areas, adapted grasses alone may be more effective than sericea-grass mixtures.

As field borders

Where a cultivated field adjoins woodland, there is a strip in which the field crop does not grow well. Tree canopies shade the strip and tree roots sap the moisture, preventing normal growth of crops such as corn or cotton. Erosion is severe along many of these field edges if they are sloping and clean cultivated or if they are used as roadways or as turnstrips for farm machinery.

Sericea is a good plant to use in these field borders because it competes better with the trees than can row crops and other shallow-rooted plants. It also provides good wildlife habitat. In some parts of the Southeast, a common conservation practice is to plant shrub lespedeza plants in a 15-foot strip next to the woods and plant sericea on the rest of the field border.



NC-D16-28

Sericea field borders provide travel lanes, wildlife habitat, and soil protection.

Field borders of this type have many advantages: (1) they reduce erosion and serve as convenient turnstrips for farm implements; (2) they eliminate the waste of labor and seed that would be used if this land were planted to cultivated crops; and (3) they are good wildlife areas, furnishing cover and food for quail, songbirds, and other wildlife.

When sericea is used in field borders around cotton or soybean fields, it should be mowed 3 to 5 weeks before the field crop is harvested. Sericea can then make enough regrowth to survive the winter.

For stabilizing eroding areas

Runoff from eroding areas deposits tons of harmful sediment on productive bottom lands and in streams. Sericea is an excellent plant to use in stabilizing such critical areas. It can be planted with tall fescue, bahiagrass, weeping lovegrass, or common bermudagrass. Once established, sericea or a sericea-grass mixture stops erosion and catches sediment that otherwise would be carried away in runoff water.

Sericea is well suited to areas on which a seedbed can be prepared with farm machinery. In more severely eroded areas, gully banks may need to be sloped mechanically before a seedbed can be prepared. Between 60 and 80 pounds of unhulled seed should be sown to get a good stand. Unhulled, scarified, or unscarified sericea seed can be used for planting if the area is mulched after seeding.

The area to be seeded should be fertilized at planting time, then mulched with about 2 tons of straw per acre. After the mulch is spread, about 25 percent of the soil surface should be visible through the mulch.

Mature plants with ripe seed still attached can be used for both seeding and mulching. The plants should be spread thinly over the areas to be seeded. In South Carolina, mature sericea plants have been harvested successfully with a silage cutter and spread with a manure spreader.

Growing sericea on critical areas provides cover and protection for songbirds, quail, and other wildlife.



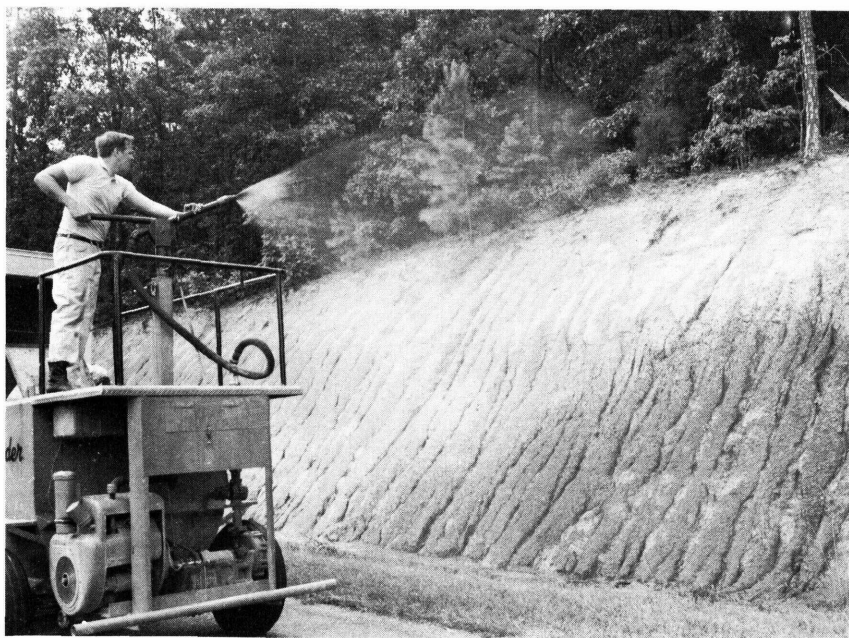
KY-732

On critically eroding sites, sericea furnishes wildlife food and cover.

For stabilizing roadbanks

Sericea is perhaps the most successful plant used on roadbanks in the South. Since it can be planted at any time of the year, newly constructed road cuts can be seeded as soon as construction is finished. Mechanical methods such as hydraulic seeding are common now. Planting rates range from 40 to 50 pounds of scarified seed to 75 pounds of unhulled seed per acre. Use scarified seed from late winter to mid-July and unscarified seed or unhulled seed for the balance of the year.

The area to be seeded must be limed, fertilized, and mulched. Threshed tall fescue and small grain straw are two of the best mulches. Use about 2 tons (dry weight) per acre so that about 25 percent of the soil surface is visible after mulching. Another application of phosphate and potash fertilizer is needed the first spring after seeding to insure complete establishment. If mowing is desired, it should be done only in the fall after the seed is mature.



GA-1,039

Slurry of sericea and grass seed, fertilizer, water, and sewage sludge compost sticks to steep roadcuts.

Planting unhulled seed in the winter is a dependable way to get good stands. A good method is to cut sericea in the fields when the seeds are ripe but have not shattered and to mulch the banks with the seed-laden stems. Lime and fertilizer applied in late winter or early spring will help the new plants survive and grow.

If you use sericea-grass mixtures for healing critically eroding areas, supplement the regular seeding rate for roadbanks of 40 to 75 pounds per acre of sericea with one of the following: 20 pounds of tall fescue, 4 pounds of bermudagrass, 2 to 3 pounds of weeping lovegrass, or, in some sections of the South, 5 to 6 pounds of annual lespedeza seed. In Kentucky, however, annual lespedeza competes so vigorously that the sericea is usually choked out. With this exception, these companion crops grow well with sericea and furnish quick cover while the sericea is becoming established. Selection of a companion plant depends on the site conditions and time of seeding.



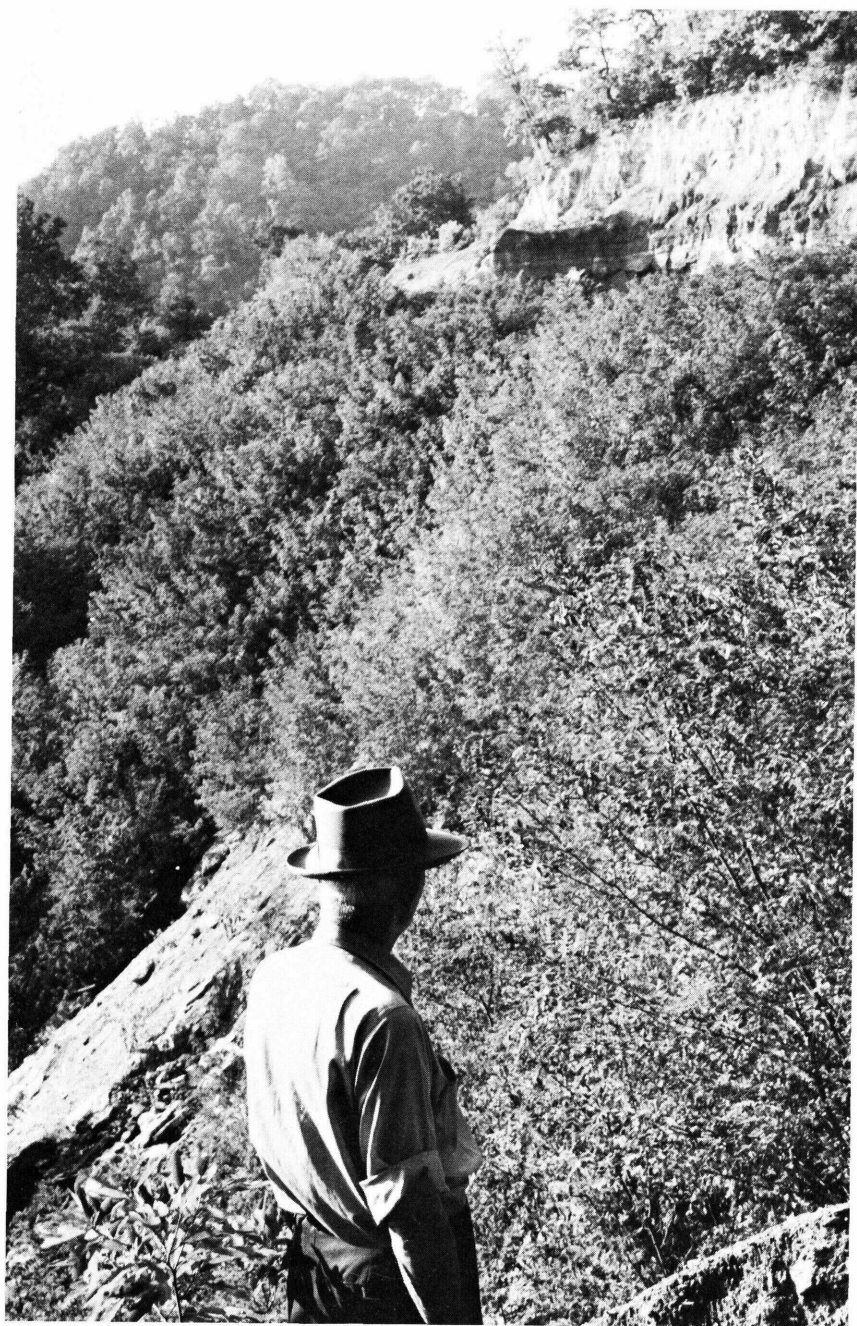
GA-1,040

Sericea-lovegrass mixture now protects many miles of steep Georgia roadbank.



WVA-703

Sericea-grass mixtures form excellent cover on dams and other fill areas in small watershed projects.



WVA-882

Strip-mine spoil area is well protected with black locust and sericea cover after just four growing seasons.

For stabilizing strip-mine spoil

Stabilizing strip-mine spoil is a problem due largely to the following conditions:

1. Spoil areas have a wide range in pH, sometimes from 3.5 to 7.0 in the same small area. This makes it difficult to find plants adapted to such sites.
2. The soil material is loose and has not had time to settle to its normal bulk density.
3. The slopes are steep, often 1:1 before any grading or smoothing. The loose soil and steep slopes cause the sites to become droughty.
4. The exposed surface consists of rock, shale, and other parent material lacking in organic matter. They are poorly suited for growing plants.

Leaching of undesirable chemicals from the exposed surface helps make the pH more favorable for plant growth, but in many areas leaching takes several years. Meanwhile erosion of the surface material continues.

Because of its adaptability to a wide pH range (4.0 to 7.0) and its ability to grow in more adverse soil conditions than many other plants, sericea is one of the more desirable plants for stabilizing strip-mine spoil. It has proved satisfactory in many places when planted alone or with Ky-31 tall fescue. When planted between seedling trees, sericea helps reduce soil temperature, holds moisture, and helps hold the soil in place until the trees become established.

It is usually impractical and often impossible to prepare a seedbed and apply lime and fertilizer on these spoil areas. But if a seedbed can be prepared, seed sericea in the same way as on other critical areas.

Pests and Diseases

Weeds

Controlling weed pests is just as important in sericea fields as it is for any other kind of hay and pasture. In the past, weed

infestations have been one of the main reasons for plowing up otherwise satisfactory stands of sericea and growing row crops for a year or two. Today, chemical herbicides have revolutionized and greatly simplified weed control.

Good management for weed control starts before the sericea seed is sown. A good preemergence nonpersistent herbicide can be used at planting time to kill many of the unwanted plants and seeds in the soil. This greatly reduces weed competition, at least for the first few years. Then, as weeds appear and become numerous, chemical treatments can be applied selectively.

For up-to-date information on the chemicals to use and how to use them, consult your county agent, herbicide dealer, or SCS specialist. Always follow the instructions on the label of the containers.

A few of the weeds that may become serious pests in sericea fields are broomsedge bluestem, *Andropogon virginicus*; field dodder, *Cuscuta pentagona*; tall dogfennel (also called cypress weed and summer cedar), *Eupatorium capillifolium*; wild or white aster, *Aster pilosus*; camphorweed, *Heterotheca subaxillaris*; Spanish-needles, *Bidens bipinnata*; and pussley or purslane, *Portulaca oleracea*.

Although herbicides can do much to control weeds, the grower can help keep weed infestations to a minimum by carefully selecting the location for the sericea field. Avoid known problem areas that are infested with bermudagrass, johnsongrass, quackgrass, nutsedge, and broomsedge bluestem. Field dodder is one of the worst weed pests, especially in sericea fields where seed is being produced.

Broadleaf weeds are bigger pests in sericea fields used for hay or seed than in fields for pasture. Livestock grazing controls many pasture weeds, whereas mowing alone does not control weeds in hay or seed fields.

All weed control programs should include the eradication of undesirable weeds growing in fence rows and in adjoining fields. Unless controlled, the weeds will spread into other fields.

Insects

Very few insects feed on sericea, and these do not cause widespread damage. Grass armyworms occasionally defoliate the plants and ruin a cutting of hay. If they arrive in late summer or early fall, they usually destroy the seed crop.

Minor damage has been done in several localities by stem girdlers. They cause some stems to die in late summer and early fall, but they do not usually do serious or permanent harm to a sericea stand.

The three-cornered alfalfa leafhopper has been known to attack sericea. Both adults and nymphs of the leafhopper cause damage by puncturing the stems and sucking the plant juices. These punctures appear singly or in rings around the stems. The part of the stem above the ring of punctures may die.

Diseases

Sericea in the Southeast is remarkably free of diseases severe enough to retard growth or thin out stands. Sericea is susceptible to cotton root rot and should not be planted on land where this disease is present. Cotton root rot is confined largely to the Blacklands of Texas.

CAUTION

Pesticides used improperly can be injurious to man, animals, and plants. Follow the directions and heed all precautions on the labels. Store pesticides in original containers under lock and key—out of the reach of children and animals—and away from food and feed.

Apply pesticides so that they do not endanger humans, livestock, crops, beneficial insects, fish, and wildlife. Do not apply pesticides when there is danger of drift or in ways that may leave illegal residues.

If your hands become contaminated with a pesticide, do not eat or drink until you have washed. In case a pesticide is swallowed or gets in the eyes, follow the first aid treatment given on the label and get prompt medical attention. If a pesticide is spilled on your skin or clothing, remove clothing immediately and wash skin thoroughly.

Dispose of empty pesticide containers promptly. Have them buried at a sanitary land-fill dump or crush and bury them in a level, isolated place.

NOTE: Some states have restrictions on the use of certain pesticides. Check your state and local regulations. Also, because registrations of pesticides are under constant review by the U.S. Department of Agriculture, consult your SCS conservationist, county agricultural agent, or state or federal agronomist to be sure the intended use is still registered.

